

Treatment of Cough

Drug	MOA	Uses	Side Effects
Antitussive Drugs: Drugs that Alter Mucociliary Factors			
General View	<ul style="list-style-type: none"> -Increase the volume of the secretions (mucus that's already produced) -Decrease the production of mucus -Change the consistency of mucus (Mucolytics) -Increase mucociliary clearance 	<ul style="list-style-type: none"> *Antitussive drugs: -Used to control, inhibit or eliminate cough -Useful to suppress intensity and frequency of coughing when it is unproductive and distressing 	
Ipecacuanha & Squill	-Natural products: have direct effect on CNS and locally on cilia to principally cause emesis which is preceded by increased secretions		-Causes emesis
Volatile oils (Lemon, anise, pine)	-Have direct action on bronchi	-Good alternative of Iodinated glycerol in case of pregnancy	
Iodinated glycerol	-Excreted through bronchial glands and stimulates secretions directly	- Widely used but have doubtful efficacy	- Can cause congenital hypothyroidism → contraindicated in pregnancy and during lactation
Bromhexine	-Increases lysosome activity leading to increased enzyme secretion and hydrolysis of mucopolysaccharides.		
Carbocisteine	- An aerosol : works through its SH group to reduce disulfide bonds in mucoproteins → enhancement of flow (↓mucus viscosity)		- May irritate the airways in some sensitive patients
Combination of H1-histamine antagonist and a decongestant	<ul style="list-style-type: none"> -Decongestants decrease mucus production -The combination results in synergistic effect 		
Hydration	-To decrease viscosity of mucus	-Either orally or IV	
Aromatic chest rub			
Ammonium Chloride			
Ipratropium Bromide	-Alter mucociliary factors	-These drugs are used in treatment of bronchial asthma	
β-agonists			
Theophylline			
Sodium Chromoglycate			
Beclomethasone			
Antitussive Drugs: Drugs Acting on the Afferent Limb (Sensory Nerves)			
Local anesthetics (Lidocaine)	<ul style="list-style-type: none"> -Topically on the chest: transient antitussive effect -IV: could have a central effect 	Compounds that are targeted to inhibit sensory nerve activity directly should, in theory, inhibit cough of any aetiology	
Opioids	-This is beside their primary central effect (inhibition of cough through CNS)		

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Antitussive Drugs: Drugs Acting on the Cough Center				
Narcotic	Codiene		-Codiene is the standard, recently found no more effective than syrup vehicle	-Causes addiction -Sleepiness
	Diamorphine			
	Morphine			
Non-Narcotic	Dextromethorphan			-Does not cause addiction
	Glaucine			
	Diphenhydramine			
	Pholcodine			
Antitussive Drugs: Drugs Acting on the Efferent Limb				
Ipratropium Bromide		-Act on the efferent limb -Can also have effects on cough receptors by altering mucociliary factors	-Given as an aerosol -Effective for asthma, chronic bronchitis, and persistent cough following URTI	
Pancuronium		-Nondepolarizing blockers (stops muscle contraction)	-May be considered in patients who cannot be mechanically ventilated because of uncontrollable spasms of coughing	
Drugs Used in Protussive Therapy				
General View		-Increase cough effectiveness with or without increasing cough frequency -They either increase superficial velocity or alter mucus factors	-Indicated when cough performs a useful function, and needs to be encouraged (e.g. bronchiectasis, cystic fibrosis, pneumonia and postoperative atelectasis)	
Hypertonic Saline Aerosol			-Improves cough clearance but not pulmonary function or subjective assessment	
Amiloride Aerosol			-For cystic fibrosis	
Bronchodilators		-Improve mucus clearance		-With too much relaxation, flow rates may decrease
Mechanical Measures		-Positive insufflation followed by manual compression of the lower thorax and abdomen -Abdominal push manoeuvre to assist expiration -Combining abdominal binding and muscle training of the clavicular portion of pectoralis major -Combination of positive expiratory pressure and chest physiotherapy in patients with chronic bronchitis		
New Treatments				
New Opioids (Endomorphins)		-Bind to opioid receptor like 1 receptor (ORL1) instead of OP3 receptor		-Opioids that bind OP3 receptor have characteristic side effects

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